BOSTON EDISON COMPANY

CAMBRIDGE ELECTRIC LIGHT COMPANY

COMMONWEALTH ELECTRIC COMPANY

NSTAR GAS COMPANY

Direct Testimony of Robert H. Martin

Exhibit NSTAR-RHM-1

D.T.E. 05-85

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Robert H. Martin. My business address is One NSTAR Way, Westwood, Massachusetts 02090.

Q. By whom are you employed and in what capacity?

A. I am the Manager of Investment Planning for Boston Edison Company ("Boston Edison"), Cambridge Electric Light Company ("Cambridge Electric"), Commonwealth Electric Company ("Commonwealth Electric") d/b/a NSTAR Electric ("NSTAR Electric") and NSTAR Gas Company ("NSTAR Gas," together with NSTAR Electric, the "Companies"). In this capacity, I am responsible for developing and monitoring business processes consistent with corporate financial and accounting policies for key operations units. In addition, I oversee the development of accounting and budget processes for capital-project cost oversight including tracking of current and projected costs and implementing cost control measures.

Q. Please briefly summarize your educational background and business experience.

A. I graduated from Bentley College in 1974 with a Bachelor of Science Degree in Accounting. Upon graduation, I joined the Commonwealth Energy System where I held several accounting positions including Group Accounting Supervisor. In

1984, I accepted the position of Supervisor of Cost Administration. In 1987, I was promoted to Manager of Revenue Requirements and Cost Administration. In 1997, I became the Manager of Regulatory Accounting and Special Projects for Cambridge, Commonwealth, Commonwealth Gas Company and Canal Electric Company. In 1999, I became the Director of Revenue Requirements for the regulated companies of NSTAR Services Company. In 2000, I became the Director of Electric Energy Supply, Asset Divestiture & Outsourcing. In 2003, I became the Director of Electric and Gas Contract Administration. I assumed my present position in April 2005.

Q. Please describe your present responsibilities.

A. As Manager of Investment Planning, I oversee the Capital Project Prioritization, Selection and Authorization Process for the operating areas of NSTAR Electric and NSTAR Gas. I am responsible for ensuring that accounting, finance, budget and regulatory practices are incorporated within the management and oversight of the Capital Project Process.

Q. Have you previously testified before the Department of Telecommunications and Energy (the "Department") or any other regulatory body?

A. Yes, I have presented testimony before the Department in a number of cases. Most recently, I testified in the transition-cost reconciliation cases for Cambridge and Commonwealth (D.T.E. 99-90), the approval of Commonwealth's buyout of its Pilgrim purchase-power contract (D.T.E. 98-126) and the approval of the

divestiture of the non-nuclear generating assets of Cambridge and Commonwealth (D.T.E. 98-78/83).

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to support the inclusion of infrastructure and system investments in the rate base of the Companies. To that end, my testimony is designed to demonstrate that the costs incurred by the Companies to expand and improve their infrastructure and to establish business systems and facilities are used and useful in providing service to customers.

Q. What is your understanding of the Department's standards for inclusion of plant investment in rate base?

A. I am aware that the Department's long-standing standard for the inclusion of capital additions in rate base is that the expenditures must be prudently incurred and the resulting plant must be used and useful in providing service to customers. However, I understand that the Department's requirements for demonstrating that expenditures are prudently incurred have evolved in the past few years with somewhat differing documentary standards for electric and gas additions.

Although I am not a lawyer, my understanding is that the prudence of a capital addition is demonstrated where a utility is able to demonstrate that capital investments are reasonable and appropriate in light of all circumstances that were known or reasonably should have been known at the time the utility made its decision to proceed with the capital investment. Fitchburg Gas and Electric Light

Company, D.T.E. 02-24/45, at 36. The Department has stated that "the prudence of a company's actions is not dependent on whether budget estimates later proved to be accurate but rather upon whether the assumptions made were reasonable, given the facts that were known or should have been known at the time." Id. at 36-37. However, the Department requires utilities to provide an explanation of cost overruns that do occur and to demonstrate that the utility has implemented cost-containment measures to control costs where possible. Id. at 41, citing Fitchburg Gas and Electric Light Company, D.T.E. 98-51, at 12-13 (1998).

For electric companies, the Department has reviewed the capital-budgeting process and evaluated cost overruns and cost-containment information available through that process. Id. For gas companies, the Department evaluates capital investments in two categories, which are "revenue producing" and "non-revenue producing" projects. Boston Gas Company, D.T.E. 03-40, at 47-72. For non-revenue producing projects, the Department undertakes a review similar to that applied in the electric industry. For revenue-producing projects, the Department reviews the pre- and post-construction rates of return associated with the completed projects. Id. at 49-63. Accordingly, the Companies' proposed rate-base additions are presented consistent with this oversight framework.

Q. Please describe how your testimony is organized.

A. Section II of my testimony describes the Companies' project-authorization process, including the management of capital-spending programs for Electric and

Gas Operations, Real Estate/Facilities, Customer Care and Information Technology. Section III discusses Exhibit NSTAR-RHM-2(a) and Exhibit NSTAR-RHM-2(b), which list the capital additions completed (and included in rate base) since the merger with authorizations greater than $100,000. Lastly, Section IV reviews examples of the major initiatives undertaken by the Companies to control and contain capital-investment costs across the Companies.

Q. Since the merger that created NSTAR, what has been the level of investment in electric and gas plant?

A. From January 1, 2000 through June 30, 2005, the Companies' gross rate base additions for NSTAR's distribution companies are as follows: $787,069,452 for Boston Edison; $187,872,422 for Commonwealth; $38,069,225 for Cambridge; and $155,296,912 for NSTAR Gas. In total, the Companies' gross rate base additions total $1,168,308,011 for the period January 1, 2000 through June 30, 2005.

II. PROJECT-AUTHORIZATION PROCESS

Q. What is the guiding principle of the Companies' project-authorization process?

A. The Companies evaluate all capital projects in accordance with a Project Authorization Policy (the "PAP"). The purpose of the PAP is to provide a formal framework to guide the decision-making, evaluation and approval of all capital and reimbursable project spending for the Companies. Within this framework, the Companies are able to identify key corporate spending initiatives, prior to

approval, to allow the Companies to evaluate all major projects and to prioritize the utilization of corporate financial resources. Capital projects subject to the PAP include, but are not limited to: (1) electric operations; (2) gas operations; (3) real estate/facilities; (4) customer care, and (5) information technology.

Q. What is the first step in the Companies' Project-Authorization Process?

A. The Companies' project-authorization process starts with a mid-year meeting of the Companies' Business Planning Group (the "Planning Group"). The Planning Group meets to review the Companies' potential capital spending over the subsequent five-year period and to develop a strategic plan (the "Strategic Plan") for presentation to the Companies' Senior Management for approval. Presentations on capital spending and resource requirements are offered by each operating area to the Planning Group for its consideration. The capital spending requests made by the operating areas are input into the Companies' five-year planning model and the results are compared to financial and performance targets. The Planning Group uses this analysis to develop a five-year Strategic Plan with capital spending levels that balance these financial and performance targets. The Strategic Plan is then presented to Senior Management for approval. Once approved, the Strategic Plan is used as the foundation for the annual planning process.

Q. How do the Companies develop budgets for capital projects?

A. Every year, the Companies' senior executives establish an overall capital budget for each operating area of the Companies. The senior managers of each operating area develop a capital plan in accordance with the overall capital budget amount set by the senior executives. Each capital plan involves a combination of individual major capital projects, capital programs composed of "sub-projects" and "line of business" work (e.g., non-discretionary core spending for new customer connections, acts of public authority, Occupational Safety and Health Administration compliance and system-improvement projects) to be funded during the upcoming year. The operating-area capital plans are prepared through a detailed prioritization process identifying the appropriate mix of work that will best address system-related issues and opportunities for growth. Multi-year funding for major projects is also reviewed through the annual budgeting process.

Q. What is the decision-making framework that the operating areas use to prioritize capital projects?

A. The Companies employ a separate decision-making framework for electric and gas operations. To prioritize the electric capital projects that should be funded, the Companies use a database that ranks projects for the budget year from highest to lowest priority, based on an evaluation of the expected "Energy at Risk" and "Customer Service Risk."

Energy at Risk is the projected amount and duration of customer interruptions measured in terms of energy. Some key factors in this calculation are the amount

of energy that would be interrupted because of an outage event or overload, the probability of the outage event, the probability of the overload, the time needed to restore customer service and the cost to reduce or eliminate the Energy at Risk. Projects are prioritized based on the calculated Energy at Risk per dollar, as well as more subjective considerations such as the presence of special circumstances or other appropriate factors.

The Customer Service Risk factor is the probability of customer interruptions taking into account asset conditions and the historical number of incidents. Some key factors in this calculation are the time customers have been without power historically, past experience and the frequency and magnitude of complaints. The interplay of the Energy at Risk and Customer Service Risk factors helps the Companies prioritize capital additions and make capital funding decisions.

With regard to gas operations, the Companies utilize a Gas Main Replacement Index ("GMRI") to analyze various aspects of the safety and integrity of the NSTAR Gas pipelines in order to prioritize capital projects relating to the upgrade or replacement of gas pipeline segments. The GMRI weights several variables relating to the integrity of segments of pipe and the costs to upgrade, repair or replace these segments for purposes of this prioritization analysis. These variables include: (1) leak rates (including the growth in leak rates and the number of main leaks per 1,000 feet); (2) pipeline pressure; (3) pipeline material; (4) soil conditions; (5) density of services that exist on the relevant pipe segment;

(6) complaints relating to the pipeline segment; (7) location of the pipeline segment; (8) the level of work necessary to resurface the area above the segment; (9) the existence of other utility construction in the area of the pipe segment; and (10) whether the segment is located in a future growth area.

From an overall perspective, the Companies' objective is to arrive at a capital budget that is the optimal balance in terms of making the investments necessary to maintain and improve the performance of the system while also ensuring a cost-effective use of the Companies' limited pool of resources. At the same time, the Companies must maintain a level of flexibility inherent in the budget process to ensure that they are in a position to deal with contingencies that inevitably occur during the year. Accordingly, all prioritization decisions are ultimately evaluated by the Companies' senior executives through an extensive budget review process, which culminates in a presentation to the Board of Directors at the end of each year.

Q. Please describe the approval process requirements for all Capital Project Authorizations.

A. Before a project may be prioritized for inclusion in the budget by the operating area, a Request for Project Authorization must be submitted for approval to the Senior Manager of the relevant operating area. The project sponsor, typically a Project Originator or a Project Manager, is responsible for preparing the necessary documentation for approval. As part of the annual budget process, each operating

area submits a budget encompassing the requests for project authorization (although project authorizations may be granted throughout the year as circumstances warrant). The proposed operating-area budget must conform with the overall budget amount set by the senior executives. In addition, all capital projects must be reviewed and approved by the Fixed Asset Accounting department to ensure proper capital and expense classification, project justification and unit of property accounting.

Projects are authorized by the Companies' management on the basis of a Project Authorization Document ("PAD"), which includes the following sections:

- Project Description and Objectives: This section provides a high-level overview of the project and why it should be undertaken.
- Scope and Justification: This section provides a summary of the project scope, resource requirements and customer and company impact.
- Financial Evaluation: This section provides an economic analysis of the proposed project. The nature of the economic analysis differs depending on the nature of the project. For example, projects may be evaluated on the basis of a cost-benefit analysis, an alternatives analysis, a cost analysis or another approach appropriate for the type of project under consideration.
- Sensitivity Analysis: Where appropriate, this section provides an analysis of internal or external variables that may affect the project.
- Risk Assessment: This section provides an identification of any special management, technical or operational issues and risks involved in the project.
- Alternatives Considered: This section evaluates alternatives where the project is non-revenue producing and feasible alternatives exist.

- Interdependencies and Implications: This section provides a summary of other functional areas affected including any positive or negative impact.

- Inventory Impacts: This section provides a summary of the inventory needed for the project.

- Technology Assessment (Information System Projects only): This section discusses the technology to be employed in the project, internal and external resource requirements and an architectural review of system specifications.

- Project Schedule, Milestones and Implementation Plan: This section describes any timing implications and start-up schedules.

- Potential for Impact on Performance Targets: This section requires a discussion of the impact on any of the Companies' performance targets, including CAIDI, SAIFI, and call-answer rates.

Because operating area budgets are prepared in advance for the next year, PADs are generally prepared and authorized on the basis of *conceptual* design estimates. Final designs for the authorized projects are not generally developed until the project is actually approved during the operating year. This means that the actual "pre-construction cost" may differ from the authorized amount due to design considerations, site-specific circumstances, changes in materials prices and other factors that are accounted for in the final design stage. As described in Section III, the exhibits accompanying my testimony listing the Companies' electric and gas capital additions include descriptions of projects whereby the initial authorization differed from the pre-construction/post-design cost estimates, and the reasons for the variation between these figures.

Q. What is the process for adjusting the initial budget approved for a particular project?

A. To the extent that the actual project cost exceeds or is identified to exceed the authorized budgeted amount, a "supplemental" PAD is prepared and submitted for approval by management. The Project Manager and Project Originator are responsible for submitting a supplementary authorization to the extent that: (1) changes to the scope of a project will affect the cost of the project; or (2) the project is expected to exceed its approved authorized budget amount. However, a supplemental authorization must be prepared if spending exceeds the authorized level by:

- $10,000 for projects less than or equal to $50,000,
- $25,000 for projects more than $50,000, but less than or equal to $250,000,
- $50,000 for projects more than $250,000, but less than or equal to $500,000,
- 10 percent for projects greater than $500,000; and
- Any project with a variance greater than $1 million.

The requirement to submit requests for supplemental authorizations is designed to keep the Companies' senior managers apprised of the cost drivers relating to projects in development. By maintaining active oversight for projects requiring supplemental authorizations, management is in a position to analyze whether there are steps that can be taken both in the short and long term to more

effectively and efficiently utilize the Companies' available resources and capital dollars.

III. ELECTRIC AND GAS CAPITAL ADDITIONS

Q. Please explain Exhibit NSTAR-RHM-2(a) and Exhibit NSTAR-RHM-2(b).

A. Attached to my testimony are two exhibits, referenced as Exhibit NSTAR-RHM-2(a) and Exhibit NSTAR-RHM-2(b), which list the capital additions completed (and included in rate base) since the merger with authorizations greater than $100,000. Each project listed was authorized and documented through the annual budget and project-authorization process.

Q. What information is listed in Exhibit NSTAR-RHM-2(a)?

A. Exhibit NSTAR-RHM-2(a) includes 488 projects relating to the following NSTAR Electric company services: (a) electric operations; (b) real estate/facilities; (c) customer service, and (d) information technology. The exhibit lists projects by NSTAR Electric company, then by year, then by project number and, lastly, by project description. For each project, the following cost information is provided:

(a) Total Direct Costs;

(b) Authorized (Budget) Amount;

(c) Variance Amount (difference between budget authorization and actual cost); and

(d) Explanation of Cost Variance.

The exhibit also includes columns referencing the company code associated with the project, the year of the authorization, a project number, project description and the type of plant (distribution or general) associated with the project. For those Information Technology-related projects that are listed as "general plant" ("GP"), the costs of these projects are allocated to distribution and transmission plant accounts.

Q. Are there any factors to consider in reviewing the cost variances on electric projects?

A. Yes. As noted above, operating area budgets are prepared in advance for the next year, and therefore, PADs are generally prepared and authorized on the basis of conceptual design estimates. As a result, there are a number of common factors underlying the cost variances that are a natural result of the estimating process rather than an indication that projects are running "over budget" because of a lack of cost control. For example, estimating the cost of materials is a time-sensitive undertaking. A large portion of the supplies purchased by the Companies for the electric distribution system are materials such as wire, conduit and other electrical facilities that are susceptible to substantial price changes in short periods of time. Therefore, if a project is authorized on the basis of a conceptual design estimate at the end of one budget year, and is not constructed until the end of the next operating year, there may be a significant variance in the cost of the project solely because of the increased materials cost occurring in the intervening time period.

Similarly, conceptual-level designs are developed based on a uniformly applied set of estimating assumptions regarding, among other things: (1) the use of internal resources versus external resources; and (2) the inclusion of straight time pay versus overtime pay. This is necessary because projects must be planned and designed by engineering on a consistent basis without knowledge of the precise circumstances that will be involved in completing the project in the field at the time that the project is scheduled. At the time that the project is actually commenced in the field, the Companies may need to use "external" labor and/or overtime pay to complete a job on an expedited time frame in order to minimize planned outage times or to address particular customer requirements (e.g., work may be completed at night to avoid a customer outage during business hours necessitating overtime or the use of an outside contractor). The Companies' ability to complete jobs within a specific time frame is also affected by work-rule restrictions that come into play in the field as work is scheduled, undertaken and completed by field staff. These types of considerations cannot be factored into the project design by engineering, and therefore, contribute to cost variances from design estimates. For example, the final cost of the first project (#00200) listed in Exhibit NSTAR-RHM-2(a) was greater than the authorized budget amount because of unavoidable changes in material and labor costs that affected post-design/pre-construction cost of the project.

Q. Please describe the information in Exhibit NSTAR-RHM-2(b).

A. Exhibit NSTAR-RHM-2(b) includes 103 projects relating to the following NSTAR Gas services: (a) gas operations; (b) real estate/facilities; (c) customer service; and (d) information technology. The exhibit lists projects by category (revenue-producing or non-revenue producing). Within each category, projects are listed by year, by project number, and project description. Similar to Exhibit NSTAR-RHM-2(a), Exhibit NSTAR-RHM-2(b) includes the following cost information for non-revenue producing projects:

(a) Total Direct Costs;

(b) Authorized (Budget) Amount;

(c) Variance Amount (difference between budget authorization and actual cost); and

(d) Explanation of Cost Variance.

The exhibit also includes columns referencing the company code associated with the project, the year of the authorization, a project number, project description and the type of plant (gas distribution or general) associated with the project.

For revenue-producing projects, the exhibit includes information similar to that noted above for non-revenue producing projects, with some additional information. The additional information includes:

(a) the Minimum Return on Rate Base calculation used by NSTAR Gas for gas projects in 2000 and 2001 and the Minimum Internal Rate of Return ("IRR") for gas projects in the years 2002-2005;

(b) Pre-Construction Total Authorized Direct and Indirect Costs;

(c) Pre-Construction Return on Rate Base/IRR;

(d) Post Construction Total Direct and Indirect Costs;

(e) Post Construction Return on Rate Base/IRR

(f) Cost Variances (difference between pre- and post-construction costs);

(g) Return on Rate Base/IRR Variances; and

(h) Explanations of Cost Variances.

IV. COST-CONTAINMENT EFFORTS

Q. Once budget authorization is granted, do the Companies endeavor to control costs as the projects are designed and completed?

A. Yes. The primary vehicle employed by the Companies for cost control purposes on capital projects is a monthly (and in some cases, bi-monthly) "Work Plan" session that is conducted by senior management to review the scope, size, design and status of each approved project to determine if changes are required to the originally approved project that will result in adjusted cost estimates. These cost adjustments may be related to necessary changes in project design, changes in the cost of raw materials, the identification of environmental remediation requirements, or other factors that affect the estimated costs of capital projects as the projects are being planned, designed and developed. The Work Plan meetings also provide the opportunity to determine if projects that have been included in a capital plan should be altered or delayed based on the most recent system and cost information available. Where it is determined that changes to the capital plan or

budgeted amounts may be necessary, project managers submit their recommendations to senior management for review and approval. As a result, this process affords management a high level of cost control over ongoing and planned capital projects.

Q. Would you briefly describe cost-containment efforts that have been implemented to manage capital expenditures?

A. Yes. As an initial matter, I should note that the consolidation activities made possible by the mergers of the Commonwealth Energy System and BEC Energy have resulted in dramatic cost reductions across a broad spectrum of activities relating to capital additions. These activities, and the resulting savings, were documented by the Companies in the Merger Savings Report, filed on December 5, 2003, and found to be in compliance with the Department's merger reporting requirement. Closing Letter, D.T.E. 04-2 (2004). The consolidation effort produced significant changes in the Companies' day-to-day operations, eliminated duplicative functions and took optimum advantage of the best technologies available through the merging companies. However, in addition to these activities, the Companies have commenced a number of other initiatives that have reduced the costs associated with capital additions. Some of these initiatives are as follows:

- **Work Management and Inventory Control**

  The Companies monitor and manage critical items for the distribution and transmission systems using an integrated work management and inventory control and procurement system. The Companies completed installation of

this system in 2000 and it now provides a platform to procure common items used in the operations of all of the Companies. To further optimize the supply chain, Boston Edison's system inventories were decentralized to bring materials closer to the point of use, which eliminates the cost of "double handling." This initiative eliminated a $1.4 million annual lease and reduced warehouse operating expense by an additional $200,000 per year.

- **Materials Procurement**

The Companies have formed alliances with vendors of high-use items such as distribution transformers, cable, wood poles, overhead hardware, plastic pipe and gas service parts. Some of these alliances have produced savings of up to 20 percent on purchased items. These alliances have proven very effective in assuring a continuous flow of high-quality components at the most competitive price, as well as providing the Companies with priority treatment for emergency deliveries in the event of extreme weather events. These alliances have also enabled process improvements in the ordering and payment of goods used in the course of providing service to customers.

- **Price Negotiation**

Aggressive price negotiations are a critical part of the Companies' cost-containment strategy. In 2004, the Companies negotiated savings for critical materials such as cable, meters, switches, stationery, distribution transformers, station equipment, gas distribution pipe and valves. These efforts have produced savings of approximately $7.5 million or 10.3 percent under market prices.

- **External Work Force**

During the operating year, the Companies rely on the use of outside contractors to perform a number of functions on the distribution systems. The Companies approach the procurement of outside resources with a cross-functional approach involving the Procurement and a number of other business departments within the Companies. Contractors are selected through a competitive bid and negotiation process. In 2003, the Companies realized in excess of $17.6 million in cost containment and negotiated savings through this process on contract expenditures of $185 million. In 2004, the Companies achieved $23.3 million in cost containment and savings on expenditures of $223 million for contract services. The Companies continually review and modify contract terms and conditions to ensure the

Companies are properly protected, to minimize risks and provide for contractor compliance under the agreements.

- **EMS/SCADA Implementation**

One critical initiative that the Companies have underway is the installation of a new EMS/SCADA application. The principal objective of this initiative is to enable the Companies to operate their electric transmission network in a more proactive manner, with a focus on increased reliability, security and efficiency. The proposed EMS/SCADA implementation will encompass the upgrade and expansion of the current system hardware and communications infrastructure, address common mode failure potential issues at the EMC via a new disaster recovery backup control center, implement current FERC cyber security requirements and provide a dispatcher training simulator to enhance the knowledge of the electric-operations staff. In addition to increasing the reliability, efficiency and security of the electric transmission system, this initiative is in accordance with the conclusions and recommendations set forth in the Power System Outage Task Force sponsored by the North American Electric Reliability Council in response to the August 14, 2003 blackout.

- **Automated Meter Reading**

In 2004, the Companies commenced an initiative to install over 217,000 automated meters in the Southborough, Westwood and Mass Avenue meter-reading districts. This will enable the Companies to read these meters using automated drive-by technology rather than the more labor-intensive manual method. This initiative reduced costs through the elimination of 56 full-time-equivalent positions along with associated ancillary costs including vehicles, cell phones and uniforms. The initiative also enhanced the Companies' data capture capabilities because the electro-mechanical technology is more accurate and less prone to human error.

- **Gas Operations Mobile Voice Communication System**

This initiative improved two-way communications within the Gas Operations organization through the implementation of a voice radio system. The project scope included the upgrade of over 300 radios across Gas Operations and the corresponding elimination of 125 cell phones and the elimination of annual maintenance contracts for the previous system. This project was completed in 2004 and has saved costs as well as improved the reliability of field communications.

- **CIC Implementation ("Galaxy")**

  This project had an impact on all components of the Companies' call-center operations including resources, processes and technology. Overall, the simplification and streamlining of the customer information systems and resulting processes eliminated over 75 positions in the call center. This project also eliminated the need to access multiple screens within the customer system in answering a customer inquiry leading to increased productivity and service quality.

Because there are many important interests within the Companies competing for a limited pool of resources and investment capital, it is always in the Companies' interest to contain costs and aggressively pursue strategies that will improve efficiency while also ensuring the delivery of safe and reliable service.

Q. Does this conclude your testimony?

A. Yes, it does.